

## CLAIMS

1. An air handling unit comprising a housing defining an interior space and a heat exchange element located within the interior space, the housing being provided with an air inlet and an air outlet communicating an exterior of the housing with the interior space, wherein the housing is at least partially formed from plastics material using a rotomoulding technique.

2. The air handling unit according to claim 1, wherein the heat exchange element is an evaporative heat exchanger.

3. The air handling unit according to claim 1 or claim 2 wherein the housing is provided with at least two air outlets for the separate output of two separate air streams from the heat exchange element.

4. The air handling unit according to any preceding claim, wherein the housing is formed of a first housing part and a second housing part, which interact to define the interior space and wherein at least the first housing part is formed by rotomoulding.

5. The air handling unit according to claim 4, wherein the first housing part comprises a cavity.

6. The air handling unit according to claim 5, further comprising an additional component at least partially located within the cavity of the first housing part.



7. The air handling unit according to claim 6, wherein the additional component is a water reservoir.

8. A method for manufacturing a three-dimensional plastic housing or a part thereof for an air handling unit, for instance a heating device, a cooling device, a drying device, a humidifying device, an air-conditioner or the like, wherein the housing is manufactured by rotomoulding in a mould to form a substantially hollow body.

9. The method according to claim 8 comprising:

(a) designing the external form of the housing, optionally subdivided into its constituent parts;

(b) manufacturing a mould with a mould cavity having a form corresponding with said external form, respectively optionally more than one mould, the mould cavity being accessible for admitting plastic and being subsequently closeable;

(c) admitting into the mould cavity a limited quantity of plastic which has been plasticized in advance by heating and/or is plasticized on the heated wall of the mould cavity, the limited quantity being sufficient to form a wall having a chosen thickness;

(d) closing the mould;

(e) setting the mould into a rotating movement, optionally about more than one axis of rotation;

(f) cooling a wall of the mould cavity while continuing the rotating movement, whereby the plastic plasticized by heating solidifies on the mould wall through cooling and thus forms a layer of cured plastic gradually becoming thicker until substantially all plastic introduced into the mould cavity has cured to form the housing for manufacturing, respectively a part thereof;



(g) opening the mould; and  
(h) taking out the finished housing  
respectively a part thereof.

10. The method as claimed in claim 9, further comprising:

(i) successively applying the method according to claim 1 at the design stage, wherein during step (c) different quantities of plastic are admitted each time into the mould cavity; and

(j) technically evaluating the thus obtained housings and choosing the best in accordance with chosen criteria for the definitive series production.

11. The method as claimed in claim 9, comprising:

(k) performing step (c) with PP, PA, PE, or in particular LLDPE, as plastic.

12. A housing for an air handling unit, for instance a heating device, a cooling device, a drying device, a humidifying device, an air-conditioner or the like, manufactured according to the method as claimed in any of claims 9 to 11.

13. A housing as defined in any of claims 1 to 8 or 12 wherein the volume of the housing is more than 15 000 litres.